

## ABSTRACT

5 A navigation aide device is disclosed that is capable of conveying traveling  
instructions to a user in possession of the device to allow the user to navigate from a  
predetermined source position on a predetermined road map, containing road  
information, to a predetermined destination position on the map, along an optimal road  
route, under control of travel instructions spoken by the device. Preferably the device  
includes a position sensor for sensing position of the device and reporting that position,  
a text to speech converter, a sound conveying device (such as a speaker and associated  
10 amplifier) operably connected to the text to speech converter for conveying speech to the  
user. The device further includes memory for storing a predetermined road map  
containing road information and a controller. The controller is operably connected to the  
position sensor, text to speech converter and map memory. The controller calculates an  
optimal road route between the source position and the destination position, generates a  
15 series of text road travel instructions that describe the optimal route in terms of  
associated road information, receives the report of position by the position sensor during  
travel, calculates the speed of the device and its direction of travel from the positions  
reported by the position sensor and determines the road map position corresponding to  
the reported position based on the position reported, the calculated speed, the calculated  
20 direction of travel and the road information. The controller also conveys the series of  
text road instructions to the text to speech converter. Based on the road map position  
determined, the controller causes the text to speech converter to convey to the sound  
conveying device each of the series of text road instructions at a time before the travel  
has reached the map position corresponding to the particular text road instruction such  
25 that the user hears relevant road travel instructions in substantially a timely manner.